

THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

# approach

June 1999

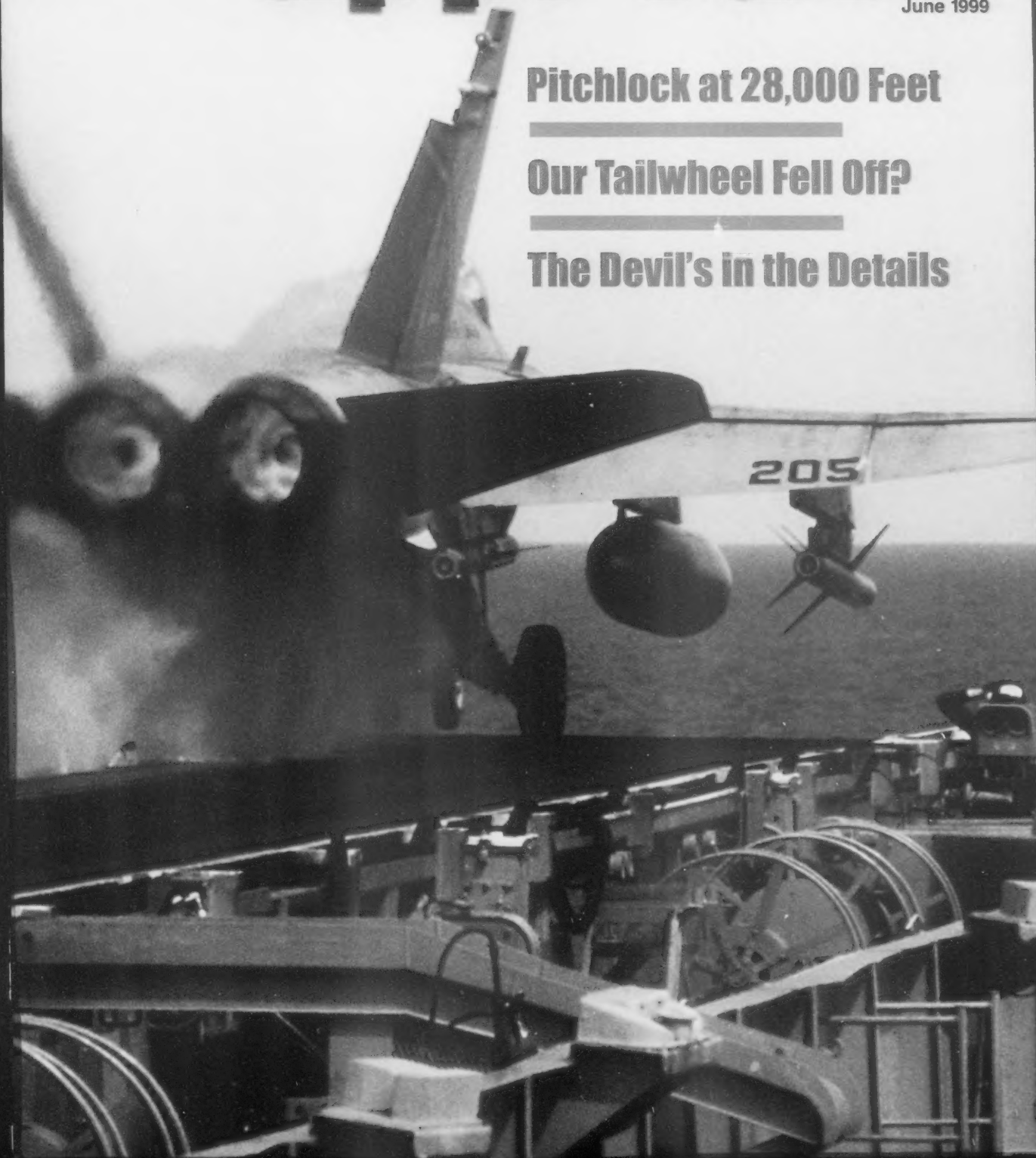
**Pitchlock at 28,000 Feet**

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**Our Tailwheel Fell Off?**

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**The Devil's in the Details**



# inside approach

The Naval Safety Center's Aviation Magazine

June, 1999 Volume 44, No. 6

**On the Cover** An FA-18A of VFA-97 launches from USS *Carl Vinson* during Operation Desert Fox.  
*Photo by David Peters.*

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# Lightning at 41,000 Feet



## Anonymous

**A**HH-H, A WEEKEND CROSS-COUNTRY—WHAT COULD be better? Not much, except maybe a 1 v 1, and that wasn't on the schedule. I was taking a T-45 to an air show at Oceana. It would be a training hop for my student. We met that morning at base ops to check the weather and file our flight plan. We filled out our paper work and walked over to the bank of weather-vision screens with the weather-guesser standing next to it.

He had pointed out a weather-warning box that fell right on the edge of our route. The thunderstorms were just beginning to develop, so by the time we got there they would still be building and would not have reached FL 350, where we would be.

No sweat, a little jog to the left would put us clear of the buildups, and then it would be smooth sailing. We quickly filed and were on our way.

Climbing out, the student put up the instrument hood to simulate IFR conditions while I enjoyed the barren Texas landscape. Up ahead, I could see the weather rising off to our right, and it looked like we would miss it. One thing I hadn't paid enough attention to during the weather brief was the fact that we would be popeye above FL210.

As we fearlessly pressed ahead, the ride began to get bumpy and we entered the clouds. We put instruction on hold and the hood came down so we could back up each other. I was on the radio with Flight Watch (FW) getting the weather picture, while my student flew the airplane. We had long since given up trying to contact any Metro station because the quality of their information was not half as good as the civilians on FW.





John W. Williams

The next sign that things were deteriorating was when my cockpit lights began to glow, even though it was 9 a.m. FW was reporting the tops at FL 400, the NATOPS limit for the T-45, and that there were several large cells nearby. They recommended a vector to keep us clear.

I requested that heading and FL 390 from center. But, we were still in the clouds, and I could see the tops of the layer from that altitude. We hadn't been inside any significant weather, but not being able to see and without radar, I was starting to worry.

If I could just see, we would be good to go. I didn't want to violate NATOPS, however, by going above 40,000 feet. The decision to climb was made for me once

**The wings had started to accumulate clear ice on the leading edges, and the nose cone was covered with it.**


I saw I could no longer see out of the canopy, thanks to icing. The wings had started to accumulate clear ice on the leading edges, and the nose cone was covered with it. I immediately started climbing and told center. We broke out of the layer at FL410, but the visibility was still marginal.

From my perch, I could see cells poking up through the undercast. The ice was still there, but it wasn't accumulating or binding the flight controls. What a relief, I thought, until I realized we were directly underneath an anvil that towered well above us. Just as I thought of what they had taught us in meteorology class about avoiding thunderstorms and the hazards associated with the area downwind of a cell, hail began sounding like someone throwing pebbles at us.

I couldn't climb, descend, turn left, right or back. I had painted myself in a corner and was now suffering the consequences. All I could do was drive straight ahead and hope for the best.

So, as the hail played psychological-warfare music all over the aircraft, it also managed to knock some of the ice off our wings, which was about the only good thing we had going for us.

Then, as if things couldn't get worse, cloud-to-cloud lightning started accompanying the music. It was almost too much to believe: above our NATOPS altitude limit at FL 410, in light to moderate hail, just above an undercast full of icing, with lightning reaching out for us from all sides. A thunderstorm was boiling to our right, our lives were hanging in the balance, and then, suddenly, peace, serenity, and a big, white light. We had obviously bought the farm, and it was time to go, but just before safing up my seat, unstrapping, opening the canopy and walking toward the light, I tried putting my dark visor down. We had actually entered the CAVU lounge—nothing but bright sun above and clear skies ahead.

I looked over the aircraft, which retained all its antennas and had no apparent damage, and thought about the promise I made to myself in that mess of weather I had just left behind: "I should have turned around, and if I get out of this, I'll never make this mistake again." 

# "Roger, Chocke My Seat's

by Lt. Jason Moser

**T**HAT'S RIGHT, SAFED. HOW COULD I HAVE MISSED something as fundamental as not arming my seat nearly six weeks into my first Westpac cruise? It was a gorgeous, glassy smooth day with a scattered layer of intensely white, puffy clouds breaking the deep-blue sky over the Indian Ocean when we trapped. I had broken my habit pattern and rushed the checklists, though. Here's the story.

We had rounded the tip of India en route to the Persian Gulf when our ops officer told us the requests for exchange flights with the other squadrons in the air wing had been approved. Since my A-6 Intruder was being retired, I thought it would be a great chance to check out other aircraft and missions. I put my name in the hat for any exchange flight, and soon I saw I was on the flight schedule as a backseater during a 1 v 1, AIC-ACM flight with one of the two F-14D squadrons in our wing.

To say I was excited is a huge understatement. The night before the flight, I got a thorough backseat fam from my JO RIO bud. I was ready.

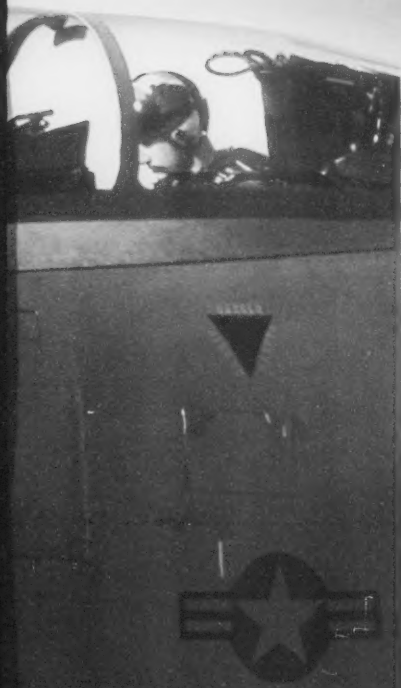
The next day, the brief and man-up went smoothly. After start-up, I got the alignment going and completed most of the checklists as the yellowshirt signaled to break us down. We were on the fantail with a straight shot to the waist cats as my pilot called to arm the seats. Before doing that, however, I had a problem.

During one last sweep of the cockpit, I had noticed the alignment had stopped. I could not get it restarted or into the navigation mode. So we told the yellowshirt we needed a troubleshooter, then I called to safe the seats. The AT checked a few circuit breakers and cycled a couple of switches, and the



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INS reluctantly cooperated. The shooter quickly climbed down the ladder, and we taxied to the waiting cat.

Once airborne, we busted out to our radial and started our briefed runs. After multiple intercepts and a little ACM, we headed back to the overhead stack with just enough gas for me to get my Mach-1.0 qual. The smooth acceleration pushed me back into my seat, and before I knew it, we were through the number and then slowing back down as we had just reached ladder.

Back overhead, we went over the landing checklists. We led our wingman into the break, kissed him off, and pulled smoothly into the break. As we decelerated, my frontseater told me the aux flaps wouldn't come down. He kept the power up and climbed back overhead to troubleshoot and confer with our tower rep. After several attempts, the flaps refused to budge, so we briefed the increased approach speed and headed for the pattern.

We trapped and taxied clear of the landing zone. After we were chocked and chained, I reached down to rotate the arming handle up to "safe" only to find that it was already up. I had made the entire flight without being able to initiate ejection. And while that might have been a comfort to my front-seat tour guide, the thought sent a shiver down my spine. The "emergency" we had experienced that day was routine, if there is such a thing when flying around the boat. Had something more dangerous happened, I probably wouldn't have had the presence of mind to re-arm the seat after not being able to pull the handle. 

Lt. Moser is an ECMO with VAQ-131.

by Lt. Alan Bell

**T**HE TEAM LEADER ON THE LSO PLATFORM assigned one of the newer LSOs in the air wing to control the recovery, with an experienced squadron LSO to back him up. The HUD showed 30-knot winds coming from 18 degrees starboard. The crosswind component was clearly beyond the 7-knot limit, but with no direct crosswind indicator on the platform, there was no way of telling what the tower was seeing. The backup LSO pointed out the problem, and as the CAG LSO, I called the Boss to ask him about it.

"Six and a half knots starboard, paddles."

The first Tomcat rolled into the groove and was lined up left most of the way, then chased lineup in-close. The resulting settle caused him to taxi about 50 feet into the 1-wire. At least it was an easy pass to grade. Then an ES-3 picked up a big settle of its own, overcorrected and flew low but flat into the 4-wire.

There was a short delay because the strike package was late getting back on this event, and with no other planes overhead except the tanker, there was a break in the action. I called the Boss again. I told him I suspected the starboard winds were causing a big settle and asked him about the crosswind component again. He replied that he had talked to the bridge already and there was nothing else he could do. I knew the winds were more than 7 knots starboard; I could see

radios to tower. Visibility in the Arabian Gulf had been horrible since the ship's arrival, but the Case I recoveries continued with low-visibility calls.

Dash 2 watched his lead break as the island passed under his wing and started timing for his own break—16, 17, break! As he passed 250 knots, the gear and flaps came down, and then Dash 2 did the rest of the landing checks while making a quick correction to establish proper abeam distance.

Arriving abeam, Dash 2 caught a glimpse of his lead, who had flown a deep pattern and was just then about to cross the wake. There was clearly not enough interval, but in keeping with the guidance LSOs had driven home since his first FCLP, Dash 2 flew his own pattern, and started the approach turn. Another link.

It was hot on the flight deck. The CVIC briefs were reporting apparent temperature (or heat index) of 140 degrees. In that kind of heat, jet engines don't work as well as they do on a cold day in southern California. Although I had talked with some of the LSOs about pushing the waveoff windows out because of the increased closure speeds and decreased engine-response time, I hadn't mentioned it today, even after seeing the first two jets get closer to the ramp than I preferred. I could have mandated a higher, minimum-waveoff clearance to compensate for what I knew would be poor waveoff

## *The Link That Wasn't*

it in the reaction of the pilots.

The captain had told us on several occasions that we should call the bridge at a time like this, but I didn't want to go over the Boss's head. My poor judgment was the first link in a dangerous chain.

The recovery was already in progress when the Talons finally switched their

capability in close, but I didn't, and that failure added yet another link to the chain.

Then the first jet returning from the strike taxied into the 1-wire, and I'd seen enough. I decided it was time to put some experience on the pickle and motioned to the team leader that I wanted him to step in and control.



The team leader, having seen two ugly 1-wires already, and having heard me warn everyone that the island was blanking the wind, began giving pre-emptive cut lights to each jet as it approached the ramp. I wasn't aware of this, and under the circumstances, I would never have allowed that technique. However, I had never given any guidance regarding the use of the cut lights, and as jet after jet settled into the 1-wire, failure of the CAG LSO to provide adequate guidance would surely read as another link in the mishap chain. Most of the Hornet pilots were struggling with lineup anyway, and never saw the cut lights. The few who did said it didn't matter; they were already landing at full military power.


As Dash 2 rolled wings level in the groove, the pilot noticed his lead still in the landing area but dismissed the thought and focused on the lens enough to notice the ball settling. Adding a handful of power stopped the settle; he seemed to get the ball moving back toward the datums. The jet started drifting left, but a quick wing dip seemed to fix that.

Scanning back to the lens, the pilot noticed the ball now starting to go high, and pulled some power off to re-establish the proper rate of descent. The ball crested slightly high, and the previous Hornet was now clear of the landing area. But as the ball started settling back into the middle, it disappeared as the waveoff lights began flashing.

The lead Hornet's tail crossed the foul line, the deck spotter stopped calling "One hundred feet," yelled "Ten feet," and ducked out of the way behind the controlling LSO. With both pickles raised high in the air, the LSOs were scanning the red deck-status light until the jet reached a

point that would normally be the 10-foot waveoff window. The controlling LSO pulled the trigger on his pickle and transmitted, "Wave off, foul deck."

The familiar puff of black smoke of a Hornet going to military appeared behind the jet, but the rate of descent didn't appear to change. As the Hornet continued approaching the ship, the waveoff calls grew more emphatic, and the backup LSO called, "Burner!" with enough voice inflection to get the attention of everyone who was near a PLAT. Still, the jet kept coming, and it quickly became obvious he was going to land.

ECAMS data later showed the engines were at full military power for at least five seconds before weight on wheels, and as the jet passed the platform, I could see the nozzles wide open in full afterburner. The 1-wire had still not yet fully retracted, and time seemed to stand still as I helplessly traced the path of the hook point toward the wires and silently prayed it would clear the ace. One link remained to complete the chain of events that would almost certainly kill a pilot, destroy an aircraft, or both, but... Talon 207 trapped on the 2-wire. 

Lt. Bell is the air wing LSO for CVW-14.



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Lt. Bell is the air wing LSO for CVW-14.



# Even a Near-Sighted Ro Gets One Occasionally

by LCdr. Brian C. McCawley

AS I DROVE TO BASE OPS FOR MY ZERO-dark-30 brief, I knew this was going to be a good day. As a student in VT-10, I had a rare good deal on my hands. I was going on an out-and-in to Oceana and getting X's both up and back, which would help me catch up with my classmates so I could graduate on time. Plus, my brother was stationed up there, and I could have lunch with him while the Navy saved me the cost of a ticket. Finally, everybody knows that instructors are much more liberal with good grades when you're on the road, so I was bound to get some good grades on this flight.

The brief went fine. The flight would be a simple airways navigation hop up the East Coast, with a practice approach to a touch-and-go at a civilian field along the way. No problems so far. I was sure I was well on my way to several aboves for the day. Once we got into the air, however, it was on entirely different story.

We've all had those days when it seems nothing goes right. I was really terrible. I couldn't seem to figure the winds, the math to calculate the time to reach the next turn point never seemed to work for me, and to this day, I don't think the controllers and I were speaking the same language. I lowered my goals to surviving the flight without getting a down.

From my vantage point, hanging on to the tail of the T-2, I could see that with every mistake I made, my instructor got angrier and more frustrated, while I got smaller and smaller in the back seat. The pressure was mounting with every error I made, and my performance steadily slipped. I kept hoping that, eventually, I would hit my stride and start performing at least adequately. But, by the time we started our practice approach, it was evident to both of us in

the aircraft that I was not going to do that anytime soon.

On the approach, I tried to get the pilot to turn the wrong way, missed the radial and turned us right in front of a 727 that was on the approach to the parallel runway. When I missed our clearance for the approach, the pilot finally threw in the towel. Even in my barely functional state, I knew that when the instructor takes the radios from the student NFO, it is not a good sign. So, I sat in the back and wondered if pink sheets really were pink.

However, now that I knew I had a down coming to me in the very near future, the pressure was off. Surprisingly, the world seemed a lot clearer. I began concentrating on trying to save my dignity by avoiding any further mistakes or embarrassments. At least if I stayed in the game, I might be able to add something worthwhile to what I already knew was going to be a painful debrief. I continued looking out over the pilot's shoulder and comparing what I saw to the approach plate on my knee.

As I sat in the back and watched, one thing became clear: something didn't look quite right. I could see one of the parallels just to the left of the nose, and there, right on the nose, was the one on which we were about to touch down. But it still didn't look right. I shook my head and blinked to see if that would make the picture outside the cockpit match the approach plate on my knee. It didn't. Our runway still looked a little narrower than it should, and the distance between the two didn't look as large as depicted.

Then, I noticed a key piece of information: the approach plate showed a taxiway between the two runways. Maybe if I looked just a bit further to the right I might see another runway.



# dent


Sure enough, there it was. Now I was convinced I was an idiot. If I didn't even know which piece of concrete we were aiming for, I figured it was a good thing the instructor took me out of this flight. But as we continued past the final-approach fix and the sight picture still hadn't changed, I began to worry again.

If we're not going to land on the taxiway, why were we still lined up on it? This guy in the front seat is an instructor; surely he must see the other runway. He wouldn't try to land on a taxiway, would he?

At the time, I hadn't heard the aircrew coordination training lectures dealing with communication and assertiveness in the cockpit. All I knew was that it was time for a decision. Should I tell the pilot that I thought he was lined up on the wrong piece of concrete, or should I just trust his experience to land the plane? I hadn't gotten one thing right all flight, and another mistake would only highlight my incompetence and insult him if I corrected him when he wasn't wrong. I figured he must know what was going on and that I should stay quiet.

I was able to live with that decision for about a second and a half and finally chimed in with a cautious, "Isn't that our runway off to the

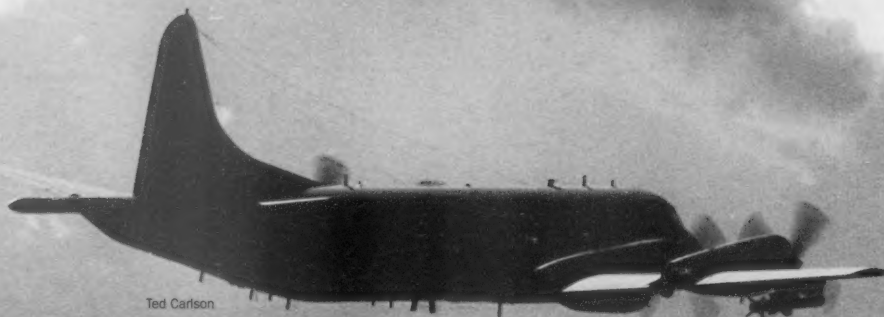
right?" Dead silence. Then a sharp sidestep to the right to line us up on the proper runway. It was a quiet flight to our destination, but I did get to talk on the radios again.

I learned a lot that day about crew coordination and two-way communication. From my perspective, no matter how bad a day I might be having, how junior I am or how stupid I might look if I'm wrong, when the alarms start sounding in the back of my mind, I have to speak up. Be assertive; it's your neck, too. The instructor also showed me a great deal. Despite my pitiful performance on the first part of the flight, he didn't automatically discard my input. A leader must be open to information from numerous sources, however unlikely they may be. Even a blind squirrel finds a nut sometimes and, to his credit, he was willing to take the time to evaluate whether the near-sighted rodent in his back seat might have something useful to contribute. And when it worked, he took it. He also took the chance of giving me a net average grade sheet. I took it. 

LCdr. McCawley flies with VAQ-135.



When I missed our clearance for the approach, the pilot finally threw in the towel.



# Pitchlock at 28,000 Feet



by Lt. John R. Long

**F**LYING OUT OF KEFLAVIK, ICELAND, OUR crew was tasked with a high-interest ASW mission in the Norwegian Sea. Arriving on-station, we found most of our operating area covered by thunderstorms. We picked our way around the buildups, maintaining VFR on the descent to the briefed location where we were to deploy our sonobuoys.

At 2,000 feet, we starting dropping buoys as thunderstorms threatened from the northwest. Realizing the area was becoming IMC, we climbed, hoping to find VFR-on-top conditions while continuing to deploy our pattern.

With the last buoy deployed, we leveled off at FL 195, which is the upper limit for VFR aircraft in the Norwegian flight-identification region. The cloud tops only rose to 19,000 feet as they passed underneath. We established a circular orbit over the sonobuoy pattern in hopes the area would eventually

## **Immediately after restart, the aft observer reported fluid running back along the No. 1 nacelle.**

clear while our acoustic operators monitored the buoys for possible contacts.

Due to the nature of the mission, the flight crew elected to loiter the No. 1 engine in the event of an extended on-station period. With an engine loitered, we figured we'd gain 30 to 45 minutes of on-station time. Our NATOPS recommends an engine should not be loitered when the OAT is below 0 degrees Celsius unless mission-required. Also, if an engine is loitered, it is necessary to maintain the propeller-fluid temperature above -26 degrees C to decrease the possibility of fluid leaks. NATOPS provides a time table indicating how long it takes the prop fluid to reach -26 degrees C based on OAT. Correcting for heat rise, our OAT would be -43 degrees C, which equated to approximately two hours, 10 minutes for the engine loitered. We agreed to start the engine at the two-hour mark.

After loitering for two hours, we began the restart checklist for the No. 1 engine. The first attempt produced no fuel flow and no lightoff. We discontinued the restart and began troubleshooting. Finding no obvious malfunctions to explain the problem, we discussed the possibility of a stuck or frozen shutoff valve.

A second attempt produced the same results. We discussed three engine considerations as we aborted the mission. We made a third try to restart, using the prime fuel-injection system. Prime would permit a larger volume of fuel that might free the valve. Twenty-five minutes after the initial attempt, the engine started. The first two attempts raised the oil temperature from -31 degrees to -2 degrees C, which gave the impression that the propeller-fluid temperature had risen as well.

Immediately after restart, the aft observer reported fluid running back along the No. 1 nacelle. The pilot in the left seat and the off-duty flight

engineer confirmed the leak, believing it to be propeller fluid. We set a turbine-inlet temperature (TIT) of 1,010 degrees C on No. 1 engine and began climbing as we finished the checklists for restart and off-station.

Ten minutes later, while we reviewed procedures for prop malfunctions, the prop-pump No. 1 light illuminated steady, indicating low prop fluid. We declared an emergency with Oceanic as we climbed to FL295 direct NAS Keflavik.

Five minutes later, No. 2 prop-pump light lit up. Immediately, the No. 1 prop audibly oversped to 104.5 percent, with an instantaneous 900 shaft-horsepower drop. While accelerating and still climbing to FL295, the flight engineer noted shaft horsepower continuing to drop. The crew determined that the propeller was pitchlocked and did emergency procedures. With a 30-knot headwind and loss of power, the crew determined there was only enough fuel to make Keflavik's 18,000-pound on-top fuel requirement in a no-wind situation. With a weather update, we diverted to Kinloss, Scotland.

Checking in with Scottish Military Control, we updated weather at Kinloss and reported our emergency. We explained that the malfunction was stable for the moment, but the engine had to be secured before landing because of the uncontrolled thrust produced by the engine. Once fuel was chopped, the propeller's reaction was questionable. Worst case, the propeller could come off of the aircraft (highly unlikely), or remain coupled, causing problems with controllability.

Other possibilities included the propeller decoupling, minimizing control problems or best case, staying coupled while reaching a stabilized negative-torque sensing (NTS) condition. NTS indications were that enough fluid is available to feather the propeller without further aggravating the condition.

*Continued on pg. 29*



# White Lights, II

by Lt. Philip Walker

**W**E'D BEEN HAVING SOME SIGNIFICANT maintenance problems. Of course, I didn't care all that much since I was a student in the FA-18 FRS. The down time seemed like a good deal, but the time out of the cockpit, especially at night, would be one of many factors that contributed to a most disorienting and memorable night flight.

It had been five-and-a-half months since I had flown at night. I had 56 hours in the FA-18. This "X" was division night bombing. I was Dash 2, and one of my classmates was Dash 3. Ground operations seemed to be moving fast as I tried to get myself squared away and ready for the hop.

Lead briefed a 10-second go. Shortly after our Desert 2 departure, I saw an APU caution. The flight was together and descending from FL 190 toward the target, Loom Lobby. A seemingly benign problem.

I reset the master caution light and told lead. The flight was approximately 35 miles from the target. Lead had cancelled IFR to proceed VFR and switched to target frequency. The flight was passing 10,000 feet MSL. I told lead I was going to use the switch to recharge my APU accumulator for 10 seconds.

He responded, "Do you have the book out?"

"No," I replied.

Lead instructed Dash 3 to return to El Toro and get his own clearance. I was shocked. I couldn't believe we were all going home because of an APU caution.

Then lead called, "You have the lead on the left." I began to reconsider the nature of the malfunction. It was entirely possible that there was a leak in one of the hydraulic systems (such as the important one that

lowers the landing gear). Lead then fell back on my right, told me to RTB and break out the book. Looking back to the west I could see the mountain range against the lights of SoCal. The mountains were above my altitude of 9,000 feet MSL.

I pushed the throttles into the mid-90 percent range and began a climbing right turn toward home. I also wanted to get rid of the caution and felt I could not do this till I read the procedures in the book.

All the while, Dash 3 was causing a meltdown with approach by appearing four minutes after IFR cancel and requesting an IFR clearance back to El Toro. Realizing I wasn't going to make approach happy either, I remembered that communication was last on the list of priorities. Navigation being second, I fumbled through my kneeboard and the up-front control to put Julian TACAN on the nose. My bucket was starting to overflow.

I decided to engage the autopilot. I coupled the jet to the TACAN and set attitude hold. The aircraft made an uncommanded turn toward Julian.

About this time, the IP called lost sight. I told him where I was and began to read off the emergency procedures for APU caution. I pushed the accumulator-recharge switch up for 10 seconds, and the caution went away.

In the meantime, the IP requested an IFR clearance from SoCal and relayed our separation. SoCal couldn't accommodate us IFR, so we proceeded VFR at 12,500 feet, following the return portion of the stereo route. We were all now separate flights and somehow, I was ahead of everyone. Finally starting to catch up to my jet, I came up with a plan for flying through SoCal airspace



# 11 o'clock Low!

**Two bright, white lights near  
one another appeared at my  
low 11 o'clock over the ocean.  
I had been cleared to 9,000 feet.**

VFR. If the caution returned, I would drop the landing gear and declare an emergency. I also realized the need to increase my scan for traffic.

Two bright, white lights near one another appeared at my low 11 o'clock over the ocean. I had been cleared to 9,000 feet. I knew that the airlines out of Orange County Airport made southerly turnouts in my general direction with huge candlepower running lights on until they reached 10,000 feet.

I checked my radar, but there was no traffic. I kept fixating on the lights realizing they were stationary in my windscreen. To my dismay, they began to rotate about each other, suggesting the other aircraft was in a climbing turn and on collision course with me.

"Hey, SoCal," I asked, "are you talking to this aircraft on my nose?"

He responded, "Who is asking?"

The lights continued to grow brighter as their movement now indicated that the other pilot now saw me and was trying to avoid me. I rolled into a 100-degree right bank and continued watching the maneuvering airliner. My altitude warning went off passing 5,000 feet.

Approach asked with urgency, "Shooter


Three One, what are you doing?"

I responded under the G's, "Maneuvering..." I initiated recovery from 30 degrees nose low and recovered by 3,000 feet.

The controller came back, "Sir, I told you to maintain nine thousand feet. There should be no aircraft in your vicinity."

Puzzled, I climbed to 5,000 feet and continued back to El Toro, where I made a visual straight-in and landed.

There are many learning points from this flight. One is not to trivialize a seemingly insignificant malfunction, change in plan, or anything else that diverts your attention. The experience also emphasized the need to review the physiological effects of night flying. The lights could have been fishing boats or other airplanes in the distance. Nevertheless, my radar was clean, and SoCal wasn't giving any advisories.

Fixating on a light source at night is dangerous. You must maintain a constant inside-to-outside scan. OPNAV 3710.7's minimum requirements for night time is six hours in six months. From an operational-risk management standpoint, a night FAM before this event would only have increased my comfort level and situational awareness. 

Lt. Walker flies with VFA-86.

# Our Tailwheel Fell Off?

by Lt. Fred Severson

SHIPBOARD LANDINGS ARE ALWAYS CHALLENGING and exciting because they test an aircrew's skill and precision. Preflight briefs usually cover items like reducing extraneous internal communications during critical portions of the flight. When you hear a peculiar noise or a strange comment, it usually piques your interest. Such was the case during one of our recent shipboard landings.

I was flying with the XO and two relatively new crewmen. Everything was going as briefed, and we had just landed with the XO at the controls. The landing was right on, wheels in the circle and on line-up. I was just about to start the after-final-landing checklist and comment on the landing when the crew chief remarked, "The tailwheel fell off, sir."

"What?" the XO and I both exclaimed.

"It just broke off and landed about five feet right of the tailcone," he calmly replied.

Just then, tower called, "Uh, it appears that your tailwheel broke off and landed off to the side of the helo. What do you want to do?"

I had been thinking about being somewhere else, but reality set in and the gravity of the situation hit me.

We had chocks and chains placed on the helo and confirmed that indeed our tailwheel assembly had broken and separated. That left the tail of the helicopter precariously perched on what remained of the protruding, jagged edge of the tail-strut piston and the tailwheel assembly.

We had two options: We could take off, RTB and land on mattresses back at home field, or we could add more chains and shut down on the ship. We decided that since we were already safe on deck, shutting down was the most prudent course of action.

Had we taken off, we would have risked the tail-strut piston separating from the remains of the assembly as we lifted. The tail-strut piston could have bounced off the ship's deck and injured people or damaged our aircraft. Also, flying around without a tailwheel probably isn't such a good idea, because certain emergencies


require running landings, which would be hazardous without the wheel.

We called the squadron, and they sent another helo with mechs, parts, and tools to accomplish our "rescue." Since we had the flight deck clobbered, they had to use the forward vertrep area and hone their hoist-transfer skills.

Our maintenance troops quickly turned to. They deserviced the remains of the tail strut and jacked the helo up, a process that was a job in itself. They had to jack the helo up, loosen the chains holding the tail down, and repeat the process until they had enough clearance to remove and replace the tail wheel assembly. Servicing the strut and cleaning up was the easy part, and after that, we were homeward bound.



The squadron sent the strut assembly out for EI. Recently, a new inspection was added to the phase cycle to NDI the tailwheel assembly, because of premature failures such as ours.

Because our squadron's maintenance department got us parts and people so quickly, we didn't even have to spend a night on the ship. Who said flying with the XO doesn't have its good points? 

Lt. Severson was attached to VC-8 at the time of this incident.

# Defense



Naval Safety Center  
[www.safetycenter.navy.mil](http://www.safetycenter.navy.mil)  
(757) 444-3520 (DSN 564)  
Photograph by David Peters



## Milestones

### Class A Mishap-free Flight Hours

Command	Date	Hours	Years
HMM-265(REIN)	01/28/99	40,000	9.5
VR-55	03/16/99	100,000	23
HSL-84	03/20/99	45,000	19
VS-38	03/21/99	44,000	12
VAQ-142	04/01/99	3,130	2
VS-35	04/04/99	18,000	8
HMLA-369	04/22/99	45,000	8
VQ-5	04/22/99	26,700	8
VFA-151	04/22/99	12,000	3
VS-24	04/22/99	10,200	3
HS-3	04/22/99	5,900	2
VAQ-133	04/22/99	3,920	3
VAQ-132	04/29/99	48,000	28
VFA-113	05/12/99	108,000	25
VT-28	05/19/99	100,000	4.3

### Class A Mishaps

The following Navy and Marine Corps Class A flight and flight-related mishaps occurred since 23 March.

Aircraft	Date	Command	Fatalities
EA-6B	04/01/99	VAQ-130	0
A Prowler's external stores jettisoned after a day cat shot.			
CH-53E	04/19/99	HMH-361	4
A Super Stallion struck the water during NVG low-light-level ops.			
EA-6B	04/19/99	VAQ-129	0
An ALCQ-99 pod jettisoned from a Prowler's wing-station 1 uncommanded.			
FA-18C	04/19/99	VMFA-251	1
A Hornet dropped two Mk-82 bombs on a bombing range's observation post. One observer was killed.			
QF-4N	04/22/99	NWTS Pt. Mugu	0
A Phantom rolled off the end of a runway during a high-power turn, injuring one civilian.			
AV-8B	05/01/99	HMM-365	0
A Harrier crashed into the water during a day CCA.			

### Class A Flight Mishap Rate

	FY99* thru 5/31/99		FY98 thru 5/31/98	
	No.	Rate	No.	Rate
Navy/Marine	11	1.13	22	2.20
All Navy	4	.54	15	1.95
All Marine	7	2.96	7	3.01
NAVAIRLANT	2	1.02	5	2.46
NAVAIRPAC	1	0.49	5	2.34
MARFORLANT	2	2.54	3	4.01
MARFORPAC	5	4.45	4	3.60
NATRACOM	1	.41	3	1.21
NAVAIRRES	0	0.00	0	0.00
4thMAW	0	0.00	0	0.00
NAVAIRSYSCOM	0	0.00	2	9.68
NAVSTKWARCEN	0	0.00	0	0.00

\*FY99 data subject to change.



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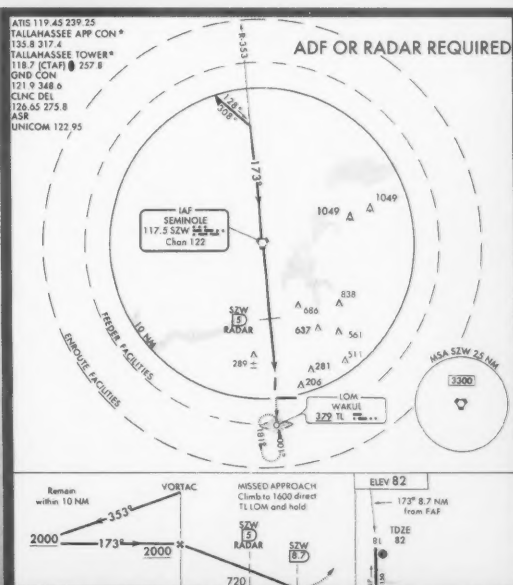
<http://www.safetycenter.navy.mil>

For questions or comments, call Peter Mersky  
(757) 444-3520 ext. 7257 (DSN 564)



# POP-UP

Edited by LCDR. Mark Enderson. Contributors can contact him at (757) 444-3520  
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### Be Alert on GPS Overlay Approaches

The FAA and CNO N633 (Head of Surveillance and Navigation) have certified non-precision GPS approaches in Canada and the United States. If the navigational aid is not at the airfield, though, a distraction could jeopardize the approach.

GPS DME always counts down during the approach, but when the VORTAC is displaced, the VOR DME may actually be counting up. HT-18, which flies TH-57s equipped with the KLN-900 GPS, found just such a scenario during an approach to runway 18 at the Tallahassee Airport (see diagram). The GPS DME distance counts down from the final approach fix (FAF) of 8.7 nm to the missed approach point (MAP) of zero, while the VOR DME is actually increasing. A step-down fix is located at 5 DME on the underlying VOR approach. Inattention could cause the pilot to begin descending at



# SAFETY *Wing*



5 GPS DME, which is 1.3 nm before the true step-down fix. The result: a collision with an obstacle the step-down fix is designed to avoid.



**H-53 Static-Line  
Parachuting Hazard Solved**

Analysts from the Naval Safety Center's Marine Corps Tactical Operations Division noticed an alarming number of dangerous incidents involving static-line parachute jumps from CH-53 and MH-53 aircraft. Several jumpers had been injured when they became entangled in deployment-bag lines and were towed for a distance behind the aircraft. In other instances, the deployment bag hit the parachutist as he left the ramp, keeping the primary parachute from deploying, or in one case, causing it to be jettisoned. These Marines had to rely on their back-up chutes.

Using operational risk management (ORM), the Safety Center analysts (GySgt. Tod Crady and Mr. David Schroy) identified the problem as the random, uncontrolled movement of the deployment bags in the airstream (photo above). They then developed several possible controls to reduce the risk of these events. With type-commander approval,

and in conjunction with experts from Marine Corps Systems Command (MARCORSSYSCOM) and Naval Air Weapons Center (NAWC) weapons division, the controls were tested during actual training jumps and documented on video.

The results were a success. Changes included:

- Increasing the static-line length from 5 to 11 feet, causing the deployment bags to maintain a stable position aft of the aircraft, even at different airspeeds (photo below).
- Moving the jumper exit spot to the left side of ramp, reducing the likelihood of entanglement (deployment bags trail on starboard side of the ramp).
- Increasing the jumper interval from 1.5 to 2 seconds to give the jumpmaster more time to ensure everything is in order.

MARCORSSYSCOM adopted the proposed modifications and the Naval Safety Center's Aviation Directorate submitted CH-53 and MH-53 NATOPS changes to alter the ramp angle from 11 to 5 degrees and established aircraft airspeed at 100 KIAS for static-line jumps.

The entire test was done at minimal cost and provided a rapid, proactive solution to a problem before a Class A mishap or serious injury occurred.



# First Line of Against FOD



# Pull, Pull, Pull!

by Lt. Bill Roark

I WAS ON MY FIRST CRUISE AS AN H2P, IN AN H-46 detachment in an AE. Halfway through cruise, after many vertreps and experiences around the fleet, I felt I had it wired. Then we launched on what promised to be an all-night mission, and I found I didn't have it as wired as I thought.

The aircraft carrier pulled alongside our ship in CONREP position so we could off-load their ammunition stores. We started our mission and quickly got into a smooth groove.

During vertreps, when the ships are in CONREP position, it is customary for one pilot to make "picks" and the other pilot to make "drops." I was in the left seat making the drops on our ship; the HAC was in the right seat picking off the carrier.

Four hours into the mission, the carrier's LSE waved us off a pick. The HAC, at the controls, complied. As we were waving off in the direction of our ship (and this was the area where controls were passed), the HAC relinquished the controls and assumed I had them. Normally, at this location, I would take the controls. However, since we were waving off and not proceeding back to our ship for a drop, I did not take the controls. We did not exchange any change-of-control calls on this pass, even though we had made three more passes before the mission ended.

Since nobody was flying the aircraft, we began to descend. My primary instrument scan was the radalt. I made low-altitude calls as we passed 125 feet. The HAC rogered my call and told me, "You're low, pull, pull, pull." Wondering why he was telling me to pull, I nevertheless pulled up on the collective as I said, "You're flying."

My HAC promptly took the controls as we scooped it out at 50 feet above the water on a very dark night.


With our hearts pumping, we climbed... and talked. Our crew chief and second crewman, noticing our departure from the pattern, inquired, "What's going on?" They had no idea how close we had come to a mishap.

We flew for another six hours that night making it an even 10 hours and "enjoyed" watching the sun come up while still conducting vertrep between the ships.

As pilots, we often hear about incidents where nobody is flying the aircraft, and I had always believed that could never happen to me. Because of a break in our routine (an unforeseen waveoff while we were over the load), the HAC lost situational awareness and passed me the controls without a positive three-way transfer.

Also, after making the low-altitude calls with the aircraft continuing its descent, I should have taken all of the flight controls instead of only pulling collective as I told my HAC that I thought he was flying the aircraft.

Most importantly, I learned you can never take any action in the aircraft for granted. When in doubt, it is better to have two people flying than none at all.

Remember the seven critical ACT skills abbreviated as DAMCLAS and always evaluate yourself and your crew on these life-saving items: D-Decision making, A-Awareness, M-Mission analysis, C-Communication, L-Listening, A-Attitude, and S-Skill. 



# SLAPPING

by Lt. Brad Davidson

IT WAS MY FIRST FLIGHT AS AIRCRAFT commander in the E-2C Group II Nav Upgrade. Our squadron had just finished transitioning from the aging Group 0, and our new birds were straight off the Grumman production line, equipped with a new integrated-GPS navigation system, multi-function displays in the cockpit, and a new storm scope that would help us detect and identify any lightning nearby.

I was flying with a new 2P and was scheduled to conduct his instrument check. We filed at base ops and got a weather brief that indicated some cloud buildups in our vicinity, but nothing we had to worry about. Our original plan was to get airborne, do some airways navigation using our new GPS and display, shoot some approaches into Misawa Air Base (an hour to the north), and return to NAF Atsugi three hours later.

As we headed toward our first way point, an ominous wall of clouds loomed before us. I verified with the CICO that the radar was off and turned on the storm scope. It didn't show any lightning in front of us. Considering the forecast, I was comfortable taking the plane into instrument conditions.

Less than two minutes into the clouds, the turbulence picked up and some unforecast severe icing started to accumulate on the wings and propellers. It was evident the weather was deteriorating rapidly, and we needed to get the heck out of there.

I requested a vector from Tokyo Control out of the storm. Suddenly, a bright bolt of lightning appeared to our left, and I knew that if it hadn't hit us, it was very close. The CICO and ACO said they hadn't heard the telltale crack of lightning against the fuselage, nor had

they seen any electrical disturbances in the weapons system, so they didn't think we were hit. Regardless, there was no question it was time to get out of this weather as the storm scope finally came alive. However, the language barrier between the Japanese controller and us made it hard for him to understand our intentions, and we continued droning farther and farther into the clouds.

The ACO pointed out there were a number of airliners to the east, flying about 7,000 to 8,000 feet above us.

"They have weather radar," he said, "and you can be sure they will be avoiding as much weather as they can."

With this information, I asked for a vector of 090 and a climb up to flight level 230. Although I was not permitted to climb to a higher altitude, ATC vectored us to the east and after what seemed like an eternity, we broke out into sunny skies.

Once we were in the clear, I requested direct to our en-route destination as it looked like we would skirt the edge of the cloud bank. Heavy winds once again placed the clouds in front of us, and we couldn't avoid going back into the embedded thunderstorms.

We changed our flight plan to go back to the Atsugi area to finish the instrument check. After a few approaches, we landed and taxied back to the hangar. We made a walk-around inspection but didn't see anything out of the ordinary.

When I went into maintenance control, I told them we'd had a close call with the weather, and that I hadn't seen anything on postflight. The crew's general consensus was we hadn't been hit by lightning. I didn't think anything of it until a half-hour later, when I was standing in the ready room and the maintenance



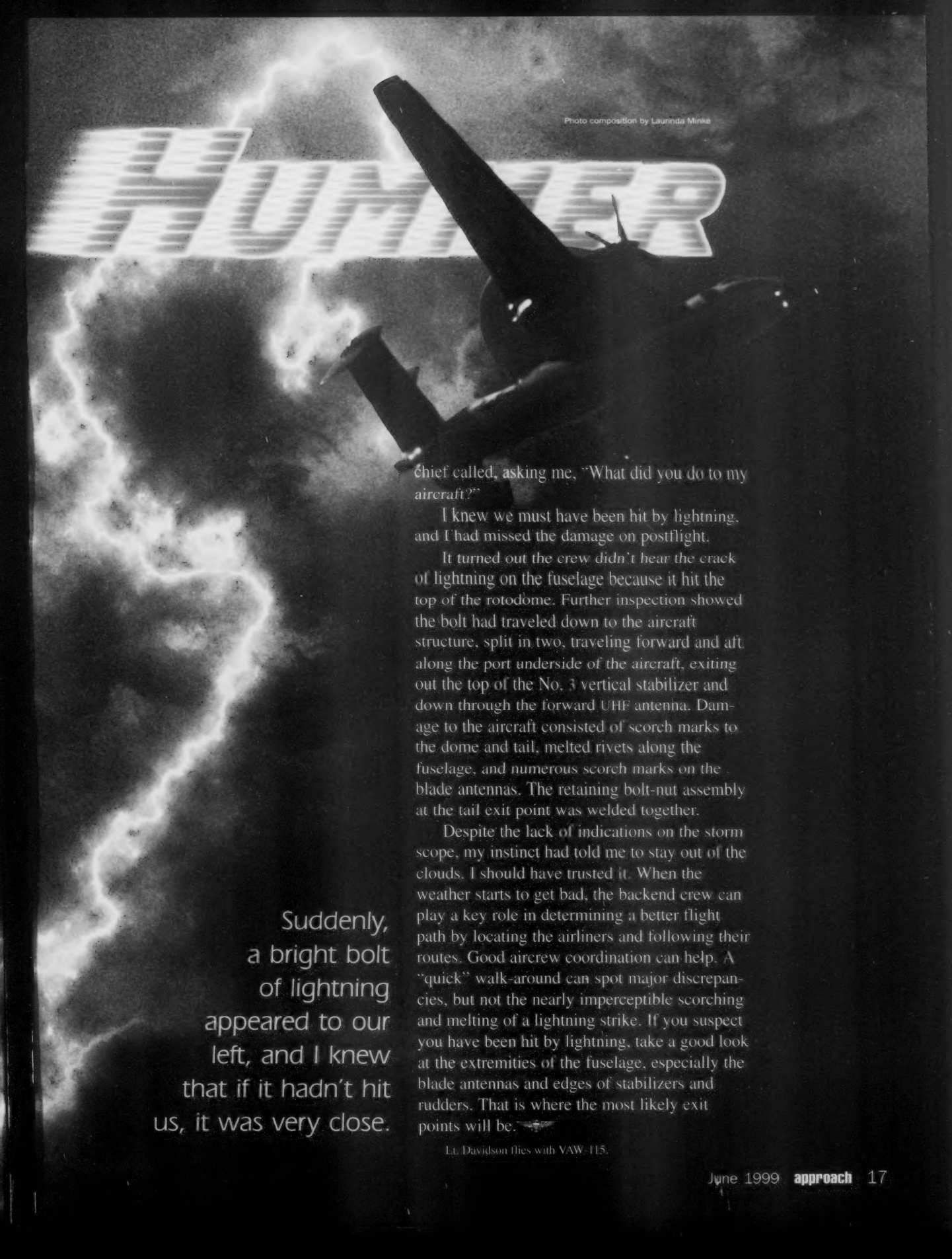



Photo composition by Laurinda Minke

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Chief called, asking me, "What did you do to my aircraft?"

I knew we must have been hit by lightning, and I had missed the damage on postflight.

It turned out the crew didn't hear the crack of lightning on the fuselage because it hit the top of the rotodome. Further inspection showed the bolt had traveled down to the aircraft structure, split in two, traveling forward and aft along the port underside of the aircraft, exiting out the top of the No. 3 vertical stabilizer and down through the forward UHF antenna. Damage to the aircraft consisted of scorch marks to the dome and tail, melted rivets along the fuselage, and numerous scorch marks on the blade antennas. The retaining bolt-nut assembly at the tail exit point was welded together.

Despite the lack of indications on the storm scope, my instinct had told me to stay out of the clouds. I should have trusted it. When the weather starts to get bad, the backend crew can play a key role in determining a better flight path by locating the airliners and following their routes. Good aircrew coordination can help. A "quick" walk-around can spot major discrepancies, but not the nearly imperceptible scorching and melting of a lightning strike. If you suspect you have been hit by lightning, take a good look at the extremities of the fuselage, especially the blade antennas and edges of stabilizers and rudders. That is where the most likely exit points will be. 

Lt. Davidson flies with VAW-115.

# ZAPPING A

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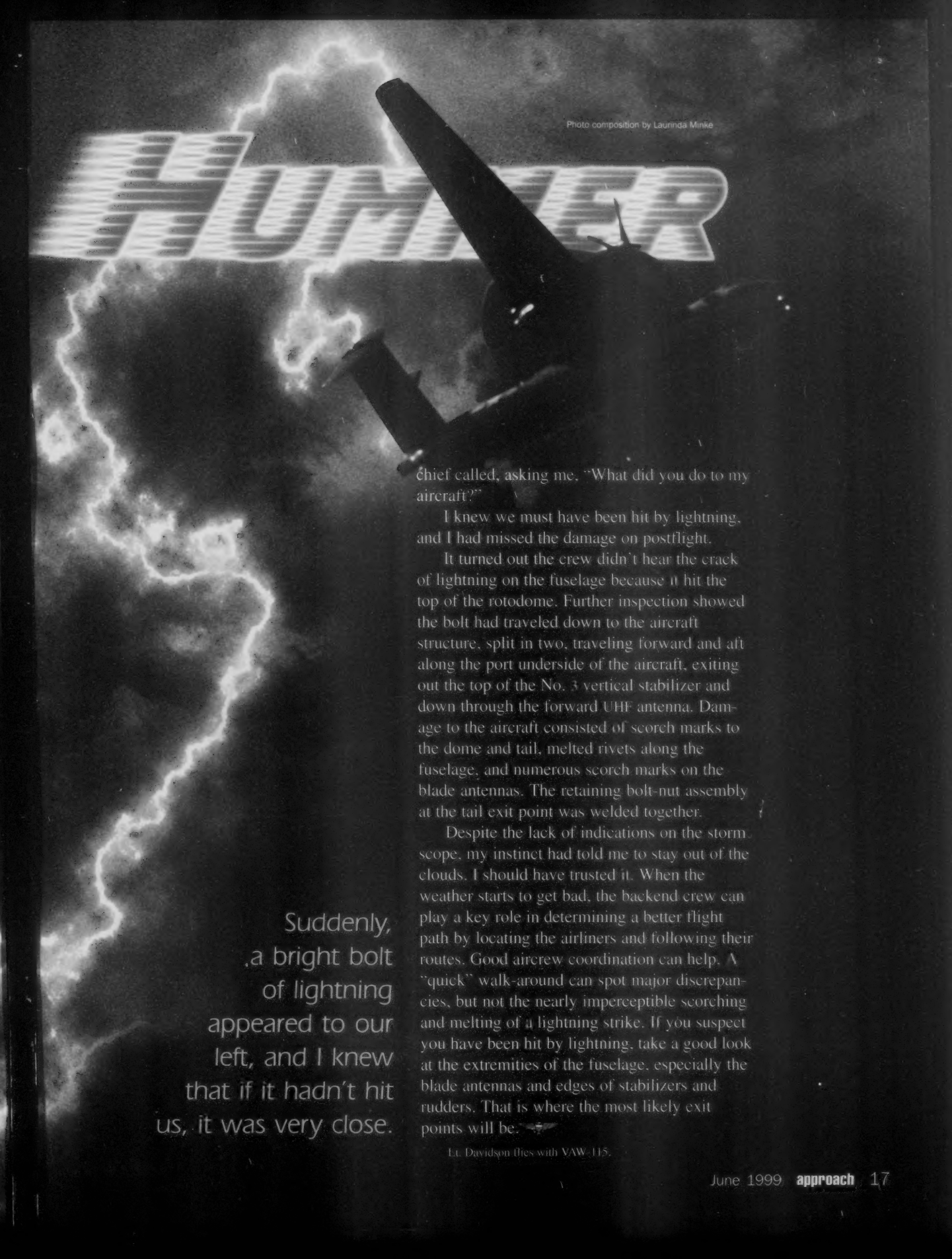


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Lt. Davidson flies with VAW-115.



# BRAVO Zulu

BZs require an endorsement from the nominating squadron's CO and the appropriate CAG, wing commander or MAG commander. In the case of helo dets, the CO of the ship will suffice. A squadron zapper and a 5-by-7-inch photo of the entire crew should accompany the BZ nomination. Please include a squadron telephone number so we can call with questions.



Capt. Leo M. Jaime  
Capt. Randall L. Russell  
Sgt. Christopher L. Daughtry



## HMM-265 (REIN)

Dragon 43 was Dash 2 in a flight of two UH-1Ns, scheduled for a day VFR training mission with a special operations training group. The section launched from the USS *Belleau Wood* (LHA-3) during blue-water operations and headed toward a training area 12 miles away.

Capt. Russell, the HAC, soon noticed the ICS was becoming weak and intermittent. While troubleshooting, the crew smelled something burning. The ICS then failed, forcing the crew to shout to each other. Several other electrical systems also failed, including the pilot's attitude gyro.

Almost instantly, the cockpit filled with smoke from an electrical fire, and an AC FAIL

caution light illuminated. Capt. Russell and Sgt. Daughtry, the crew chief, scanned the instrument panel and electrical components to determine the source of the fire. Capt. Jaime, the copilot, flew the aircraft and turned back toward the ship. The crew ran through NATOPS emergency procedures, securing the inverter and all other electrical equipment. The smoke quickly stopped, and Capt. Russell took control. The Huey was now NORDO and without AFCS.

Recalling their last fuel state, the crew set a bingo and elected to leave the electrical power secured. They established an orbit and waited for the lead aircraft to rejoin on them.

En route to the ship, Capt. Jaime and Sgt.

Daughtry used HEFOE signals to alert the other crew they were without electrical power. Capt. Jaime then used the PRC-90 from his survival vest to convey his intentions on Guard. Dash 1 declared the emergency, and the flight entered the charlie pattern. Dragon 43 recovered safely.

A conditional inspection revealed the video display unit (VDU) had chafed the wire bundles located behind it in the nose compartment. The exposed wires shorted out the VDU and caused the fire. The squadron prepared a hazrep, and subsequent inspections found that approximately 30 percent of the UH-1N inventory had similar problems with chafed wire bundles.





Cpl. J.R. Rose  
LCpl. M.L. Cortez  
Capt. B.D. White  
Maj. D.C. Deamon



**HMH-466**

While lifting from Ie Shima, Okinawa, with 24 passengers, the aircrew heard a loud bang from the rear of their aircraft. Capt. White, who was at the controls, saw the Ng and torque gauges for the No. 2 engine drop to zero. Maj. Deamon told the crew and then

ran through the procedures for an in-flight engine failure.

The crew secured the No. 2 engine and applied full power to the No. 1 and No. 3 engines.

Capt. White returned to the zone and made a no-hover landing. The aircrew made an emergency shutdown, and all passengers and crew left the helicopter.

Initial examination indicates that the No. 2 engine power-turbine-bearing failed.

Maj. Loren Barney  
Cpl. Jason Guilmain  
Cpl. Mark Shelgosh  
Capt. Vincent Ciucoli



**HMM-166**



While on a squadron deployment to NAS Fallon, the crew of Rocky 613 was flying through the local work area on a training mission. Over the mountains at approximately 300 feet AGL, they heard an engine rollback. Maj. Barney, who was at the controls, told his copilot, Capt. Ciucoli, to secure the PMS. Cpl. Guilmain and Cpl. Shelgosh reported the No. 2 engine ap-

peared to be on fire.

After securing the PMS, Capt. Ciucoli checked the engine instruments and confirmed the No. 2 torque needle was fluctuating between 10 percent and 70 percent.

Knowing the aircraft was not capable of flying single-engine because of high density altitude and weight, Maj. Barney headed toward flat terrain to land. As he passed 100

feet AGL, the No. 2 engine continued smoking heavily.

Cpl. Guilmain and Cpl. Shelgosh confirmed the likelihood of a fire to Capt. Ciucoli, who secured the engine and discharged both fire bottles into that engine.

After landing, the crew made an emergency shutdown and left the helicopter. An EI is underway to determine the cause of the engine failure.

# Park It!

**...he assured us that his hand would not leave the parking brake handle until he had restored it to its stowed position.**



*by LCdr. Chuck Radosta*

**F**ROM OUR FIRST DAYS IN PENSACOLA, aviators are taught such golden rules as "Aviate, navigate, communicate" and "Bingo means bingo." Naval aviation, however, is riddled with examples of forgetting or ignoring these rules. During a recent six-week deployment on board the Navy's newest aircraft carrier, we learned a valuable lesson and reinforced some of these truisms.

It was the first day of carrier qualifications, and we were looking forward to bagging some traps. The sky over northeastern Florida was bright blue, the seas were

calm, and the deck was open and inviting.

The Rooks' newest pilot, crewed with me and two other experienced senior ECMOs, had just grabbed the first of four traps. It was our pilot's first trap as a fleet aviator and, undoubtedly, the adrenaline was pumping as he cleared the landing area and followed his flight-deck director to cat 2 for another launch.

As we taxied past the JBD, the front-seaters completed the takeoff checklist, and rogered a 43K weight board. Then we waited for the greenshirts to hook the jet into the shuttle. Wanting to relax for a minute before being hurled into the air again, the pilot pulled the parking brake and told the rest of the crew.


We were not the first crew to forget this rule and will probably not be the last. We had more than 7,000 hours of experience in the plane, so if you think it can't happen to you, think again.

Once airborne, after the usual exchange of expletives, we started looking at the bingo fuels and talking about where we were going to land. We elected to plan a divert to NAS Cecil Field because of the number of runways there, compared to NAS Jacksonville, where we would have probably closed the field for 12 to 24 hours. The dirty bingo to NAS Cecil was ingrained in everyone's brain, except those decision makers on the ship who, of course, "were here to help."

It's debatable if the ship would have let us go below our dirty bingo fuel if we had not forced the issue. Once you reach bingo, rest assured, you need to point the nose to your divert and get on the bingo profile. Don't let anyone change your mind.

The squadron's emphasis on crew coordination and a rankless cockpit helped us a lot. As the frontseaters worked the bingo profile, the backseaters coordi-

nated with Cecil Tower so an LSO and crash crew were on station well ahead of time.

After a successful arrested landing, we were reminded of another golden rule: don't move any control surface after blowing a tire. Postflight revealed a 16-inch piece of the starboard rim imbedded in the inboard flap. If ECMO 1 had not stopped our shaken pilot from cleaning up, and that 16-inch piece of rim had lodged in a different place, life could have been a lot more interesting. It took a little ingenuity and more than 24 hours to move the plane from its resting place on the runway. 

LCdr. Radosta flies with VAQ-137.



Although against launching procedures, he assured us that his hand would not leave the parking brake handle until he had restored it to its stowed position.

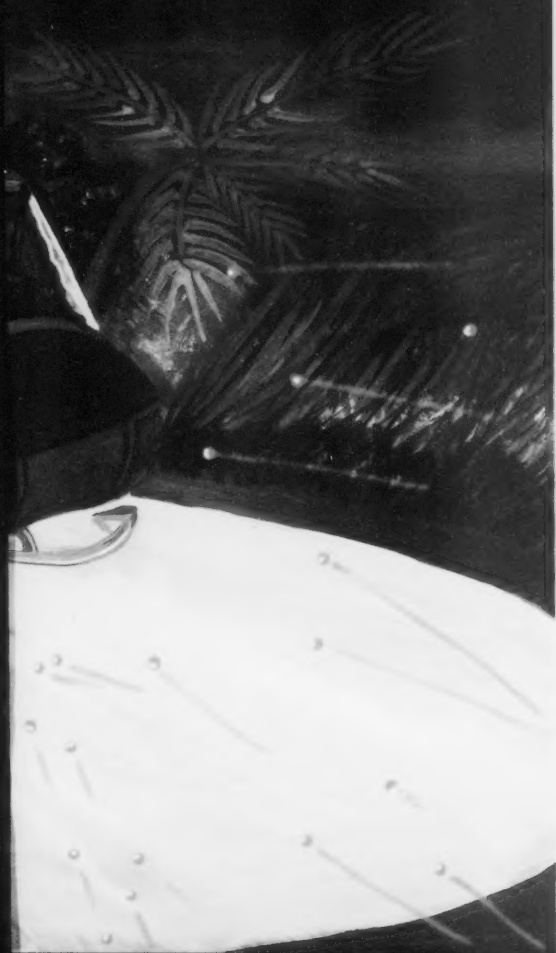
Swerve left, swerve right, and we were airborne minus two mainmount tires. In case there is doubt in anyone's mind, two blown tires do not slow the mighty EA-6B down one bit. It did leave some impressive skid marks, though. I would like to think that on every flight, aircrew learn something new, and we were no exception. We had ignored the golden rule, not to mention a caution in NATOPS, which told us never to pull the parking brake forward of the JBD.



# The Devil's in the

**...if you were shooting a night approach into the middle of a fire fight, what is the very last thing you'd expect said Army aviator to do?**





# Details

by CW4 Bill Tuttle, USA

SOMETIMES, SOMEBODY WITH ONLY your best interests at heart will try to get you killed. Since, technically, a war story should have something to do with a war, here's the tale I use to introduce my aircrew coordination classes. Some quick background. It was April 1970. One night, an armored cavalry squadron got cut off and chewed up by the 17th North Vietnamese Army Division. The senior advisor called for an urgent medevac; what he got was me and my merry killers.

It really was a dark and stormy night. We—a crew of six—were flying a UH-1H Nighthawk gunship with a minigun slaved to a xenon searchlight and a .50-cal on the right, twin .60s and a grenade launcher on the left. We were flying through a midnight monsoon at 500 feet. It was, after all, an urgent medevac.

Believe it or not, we had actually managed a flight brief before takeoff and a crew brief en route, a sort of Jurassic version of aircrew coordination, but with a crew of six (four of us heavily armed), I didn't want any solo players.

My Firefly flare ship took up a five-rotor-disk, staggered—right after confirming he could see my steady—dims with no problem. (No, child, NVGs hadn't been invented, yet.)

I won't bore you with the details of torrential rain, lightning, turbulence, and popping in and out of the clouds we never did see, or the cheery, "Radar contact lost; last observed heading was *skrrk*. See you, *skrrk*, you get, *skrrk*..." Or the water leaking from the overhead panel, or the intermittent radio contact with our folks on the ground. It made FM homing a real chore until we finally made visual contact. We could tell where they were laagered by all the green-and-white tracers converging with all the mortar explosions.

I will, however, bore you with two very important details. My Peter-Pilot's only previous night flight had been at an Alabama stagefield, and his only previous flight in the Land of the Two-Way Gunnery Range had been yesterday's in-country checkout flight. But earlier in the evening, I had observed that he could fly instruments like a 1930s mail pilot. Oh, frabjous day! The boss had finally paired me up with a copilot who wouldn't try to kill us in the clouds.

And now for the part you've been so patiently awaiting.

At a half-mile out and 200 feet above the mud level, the opposition stopped firing into the laager and began putting random bursts into the sky. Heh, heh—not even close. One hundred meters out and 75 feet up, I could see armored personnel carriers skulking in the murk. Thirty meters out and 30 feet above the mud, I was nice and slow, picking my way through the antennas, raindrops and rice straw beginning to swirl in the rotor wash—the Zippo lighter in the steel pot began to flicker, marking my touchdown spot.

Question: If you were shooting a night approach into an Alabama stagefield, what is the very first thing you would expect an Army aviator to do? Conversely, if you were shooting a night approach into the middle of a fire fight, what is the very last thing you'd expect said Army aviator to do? If you answered, "Turn on the landing light," to both questions, you're absolutely correct. Care to guess what my instrument ace did? Unannounced?

The troops in the laager nipped back inside their APCs, the raindrops and rice straw turned into a million points of light, swirling in a million different directions; the bad guys reoriented their fire with commendable speed, and the lovely, green basketballs now joined the tumbling mirth of rain and straw two feet from my face. My previously dark-adapted eyeballs uncaged,


and I got a screaming dose of vertigo.

I won't bore you with details of transitioning to instruments, starting a climbout, transferring controls to my thoroughly contrite copilot ("I thought it'd help you see the antennas!"), making calls to Firefly, and trying to figure out why the direction "up" had suddenly acquired the gift of bilocation. At least, I didn't have to turn the landing light off; one of the other team's superstars shot it out for me—along with my chin bubble. I won't bore you with the details of what happened when I disgustingly hollered, "Aw, shoot!" and the fearsome foursome in the back opened up with full left and right suppression. And I certainly won't bore you with all the details of our second voyage into the laager to pick up the wounded that Firefly couldn't extract. Everyone we hauled out lived, which is the best part of the story.

Would a really thorough crew brief have reduced the thrill factor? That's hard to say. I'd been Nighthawking for months, and it would never have occurred to me that a pilot would touch the landing-light switch, never mind turn the blasted thing on in a hot LZ. So, just where does aircrew coordination come into play here?

Well, for starters, how about "situational awareness for two?"—the newbie not being fully aware of just what "combat zone" really meant, and the old guy not being fully aware of just how unaware a newbie could be. And, oh yeah, the "halo effect"—the kid's great on instruments; this should be a no-sweat mission."

And let's not overlook "sudden loss of judgment." Did I make his comfort zone a wee bit too comfortable with my piece-of-cake briefing?

The devil's in the details. 

CW4 Tuttle serves with the Army Aviation Support Facility No. 1, in the New Jersey Army National Guard. This article originally appeared in *Flightfax*, published by the U.S. Army Safety Center.

# Wait! I'm Not Ready-y-y!

by Lt. Jack Van Natta

IT WAS THE SECOND DAY OF DEPLOYMENT, and we had nearly completed our CQ. Just one more of our E-2 pilots to qualify and we would be ready to turn west toward "...another 'crisis' in Iraq" (as CNN was describing it). But since no official theme song played as the ominous lettering scrolled across the ready room's television, we felt like any call to action was a week or two away.

Completing CQ remained the most important thing at hand. We made two touch-and-goes and one trap. One more cat shot, then the final trap, and we would all be heading west. I was the lone NFO in the back of the tube and had the ditching hatch removed and stowed for the cat shot as we taxied toward cat 2. Shortly thereafter, we went into tension.

When the E-2's engines are at full power and the ditching hatch is open, it's hard to hear ICS communications clearly. You learn to listen for certain phrases. "Engines are good, hydraulics check good, circuit breakers are in, I like it. How about you?" the pilot asks the copilot. Then, "Are you ready in the back?"

This time, it went something like this: "Engines are good, hydraulics check good, circuit breakers are... wait a minute, something popped. Let me check it."

I couldn't understand the next few phrases the copilot said, but the last one caught my attention.

"He's touching the deck!"

Throughout all this, my seat was facing forward, but I was turned sideways, with my hand on the cold-hot mike switch ready to respond to the expected "ready in the back?" question. I still was not sure I had heard right, but I decided to turn and face forward to prepare for a launch, anyway.


As soon as I did, I was slammed into my seat, and we were off.

"What the hell happened?" I wondered.

The copilot seemed just as surprised as I was.

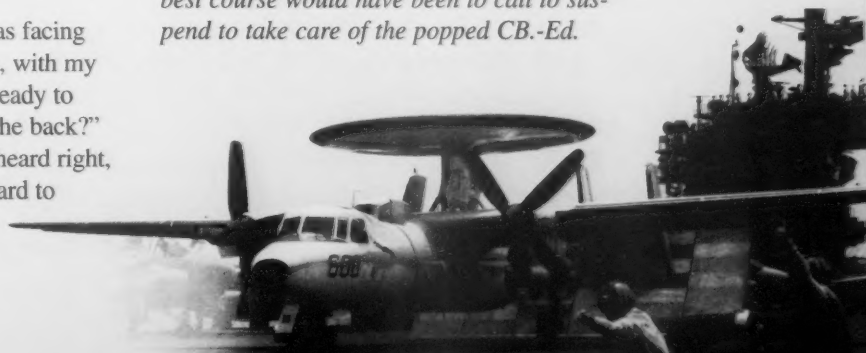
"All I did was reach up with my left hand and feel for the popped circuit breaker. What was the shooter thinking?" The copilot had actually slid his seat as far back as it would go and fully reclined it so the shooter could not possibly have seen his hand move. Obviously, the shooter thought he saw a salute. It had been a long day, and we hadn't asked to suspend cat 2. Whatever the reason, this experience was definitely an eye-opener.

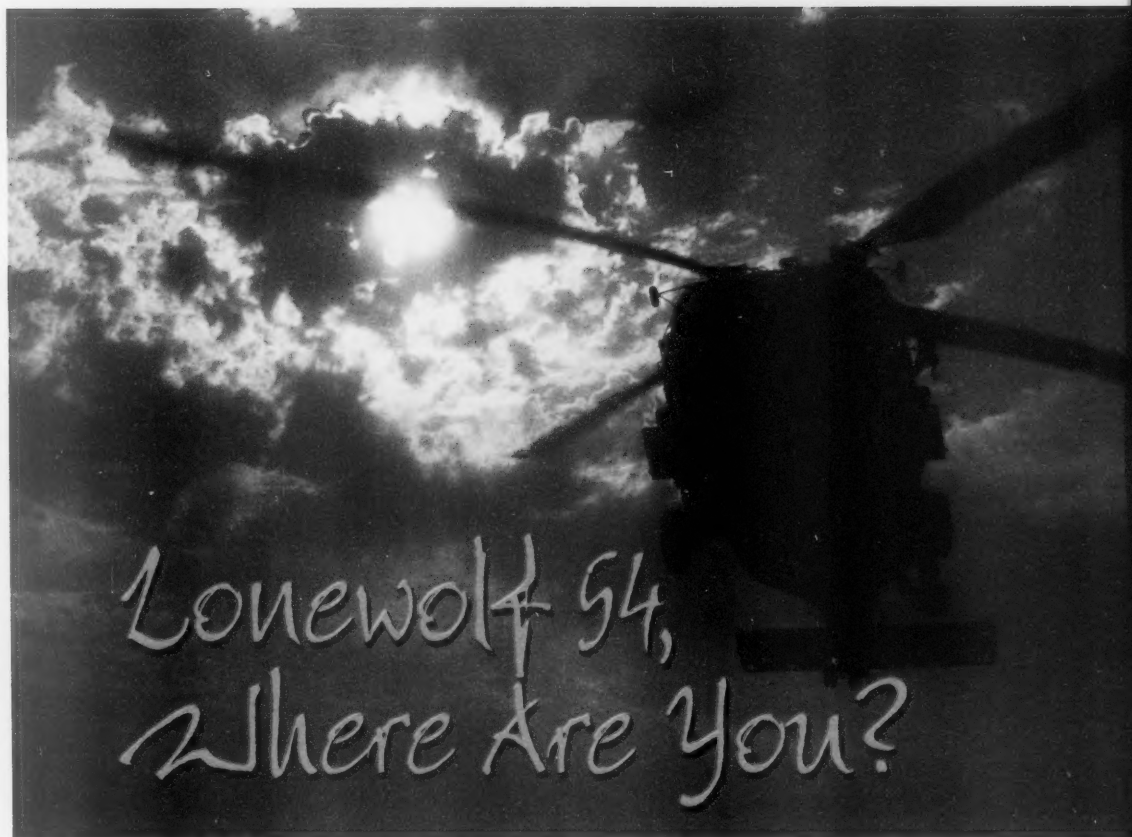
The shooter told us later the visibility into the E-2 cockpit is so bad that almost any hand motion will result in a launch.

First, a cat shot is nothing to take lightly, no matter how many you have had. Second, if something doesn't feel right, it probably isn't. I was not completely sure what I was hearing throughout the launch sequence. I just knew something wasn't right. Whenever you are in tension, you must be ready to go no matter what. Taking an unexpected cat shot is not just uncomfortable, it can lead to some lengthy stays in medical. 

Lt. Van Natta flies with VAW-117.

*Any motion above the rails at such a critical time, even with the care the copilot took to hide his movements, is hazardous. The best course would have been to call to suspend to take care of the popped CB.-Ed.*





*by Lt. Cory Culver*

"**R**ADAR CONTACT." THOSE TWO WORDS from ATC create a feeling of security for a pilot in congested airspace. In theory, that phrase implies that someone down there is making absolutely sure you don't hit the ground or another aircraft. However, controllers are not infallible, and they may make potentially fatal mistakes.

I had recently returned from Westpac and had my annual instrument check hanging over my head like a trip to the dentist. Woefully behind in my precision approaches, I was glad to see I was scheduled for a night hop with a new lieutenant commander in the squadron who wouldn't mind spending a couple of hours in the GCA pattern.

During the brief, my copilot indicated he hadn't worked the GCA pattern at a particular SoCal air station in a long time. I had been there often, but not since returning from deployment.

We contacted SoCal Approach for entry into the GCA pattern. Since we were transitioning from a VFR corridor, we were significantly higher than the 4,000-foot GCA traffic pattern. I wanted to make the approach a little more challenging, so I turned off the SH-60B's trim and autopilot functions (the AFCS).

Approach cleared us for multiple approaches and asked if we would accept a student controller for training purposes. We were happy to oblige, and were vectored around the box to set up for final approach. SoCal gave us our final approach-intercept vector and told us to stand by for GCA final control.

As we waited for our final controller, we noted an FA-18 on our left that was setting up for a VFR approach on the parallel runway. We figured he wasn't a factor but kept a close eye on him.



We continued on our last assigned vector until we had almost crossed the extended centerline. The final controller had not contacted us yet. I was about to key my microphone when his excited voice called out, "Lonewolf Five Four, if you hear this transmission descend immediately and come to course two-seven-zero!"

I dumped collective, and we began descending at more than 1,500 fpm while turning west. Our controller seemed relieved to have finally established comms with us and then calmly told us we were approaching course well above glide slope. We assumed he was concerned about the Hornet in our vicinity and had given us a radical descent to keep us out of danger. We continued our descent.

Since things seemed to be back under control, I continued our approach with the AFCS off. My copilot maintained an outside scan,

ignored up to this point) and was shocked to find that although we were at 1,200 feet MSL, we were only 400 feet off the ground! We were still five miles away from the field and descending at 500 fpm.

At that moment, the controller repeated his deadpan delivery, "On course, well above glide slope."


I immediately leveled off and practically shouted through the radio, "Final controller, we are not above glide slope! We are at twelve hundred feet, four hundred feet above the ground!"

His irritated response made my jaw drop.

"That's a negative, Lonewolf. You are on course and still well above glide slope." I couldn't believe it. Our controller had no idea where we were.

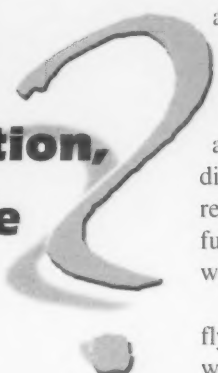
Hills loomed a few miles from the approach end of the runway. As we passed over them in the dark, my altitude warning system advised me we were only 250 feet from hitting the ground. I pulled collective and shot up to a safe altitude for the final minutes of the approach. As we waved off, a new controller apologized for the near-disastrous approach. He controlled us for the rest of the evening, which passed uneventfully, except for our constant recounting of what had happened.

This experience changed the way I view flying under radar control. Our initial controller would have flown us into the ground if we hadn't recognized the odd visual cues. An IMC evening could have had a much different and more somber ending.

Radar controllers are there to help you complete your mission safely, but they cannot replace an alert aircrew, and good situational awareness. Now, I pay much closer attention to the flight pubs and always cross-check instructions from ATC. "Radar contact" may mean that more people are helping to keep you from a mishap, but if you're a smart pilot, you'll remember no one is more interested in your survival than you. 

Lt. Culver flies with HSL-45's Det One.

## **He asked the \$10,000 question, "What altitude are we at?"**



noting traffic and local VFR landmarks, as I refocused on my instrument scan. The controller said we were on course but well above glide slope. Soon, I began to feel like something was wrong, so I slowed our descent rate to 500 fpm, even though the controller continued to admonish me for being well above glide slope. My copilot soon realized there was something wrong, because he was looking up at the local foothills instead of down.

He asked the \$10,000 question, "What altitude are we at?" I shifted my scan to the radar altimeter (which I had completely

# LESSONS LEARNED

In their chutes, they barely cleared the now-flaming wreckage.

## Confirmation Bias

by LtCol. Tom Meyers

ON ROTATION, A PILOT SAW A "BLACK BLUR" flash by the cockpit on the starboard side. At almost the same time, he and his copilot heard two "thuds" on the aircraft's fuselage. The pilot felt committed to continuing the takeoff, but he immediately told the tower of a possible bird strike. Constant banging noises on climbout reminded the crew of compressor stalls, but a check of engine instruments revealed nothing abnormal.

The pilot flew runway heading to 700 feet AGL at 220 knots and turned toward a right base leg, planning to recover on whatever runway was available. The stall-like noises persisted, and the pilot continued troubleshooting while maneuvering to land. He committed to land only when he believed his instruments had confirmed the failure of his aircraft's starboard flight-hydraulic system, which was driven by the engine.

Now convinced of a problem in the right engine, the pilot quickly cycled the starboard throttle to clear the engine stall. He tried to relight the starboard engine, even as conditions worsened. Finally, with the aircraft decelerating through landing speed and descending through 200 feet AGL on a modified base leg, the crew ejected. In their chutes, they barely cleared the now-flaming wreckage.

What went wrong? They lost their aircraft due to a combination of a phenomenon to which we are all vulnerable: confirmation bias, the tendency by human beings to convince themselves of what they expect or wish, rather than of what is actually occurring.

What really happened? At rotation, the aircraft's port engine ingested some small

bolts. This engine FOD immediately led to a series of intense but very short compressor stalls, which the aircraft's engine-stall-warning system didn't recognize. As a result, the crew didn't receive any of the usual engine-stall warning signals.

Along with the unidentified stall, the pilot had perceived that "black blur" passing closely along the cockpit's starboard side. Immediately thereafter, the crew heard "thuds" emanating from somewhere on their airframe. The starboard-side blur fooled the pilot into believing his right engine had ingested a bird. In truth, that engine was performing perfectly; the bolts had knocked out the port power plant. The cockpit instruments accurately confirmed this situation, but the pilot's preconceived notion never allowed him to accept this information. Instead, he interpreted several accurate indications of port-engine problems as indications of right-engine problems that did not exist. He became a victim of confirmation bias, examined the wrong problem, and made things worse.

### LESSONS LEARNED:

1. Be aware of confirmation bias and our vulnerability to it. No one is exempt, but we can ward off its sometimes-catastrophic effects by slowing down, questioning our initial judgments, and enlisting the troubleshooting support of the entire crew.
2. Don't allow flyable problems to carry you into the realm of a mishap. Always tend to your aircraft first. Far more often than not, it'll get you where you want to go.

LtCol. Meyers is the head of the Aircraft Mishap Investigation Division, Naval Safety Center.


**Pitchlock at 2,800 Feet** continued from pg. 11.

To avoid additional distractions, we discussed landing with three engines, covering our landing brief and ground-roll landing distance. Approximately 150 miles from the field, we began a gradual descent to maintain a constant airspeed and 100 percent rpm. About 50 miles from Kinloss at FL 135, the engine reached its maximum allowable TIT and SMP. We secured the fuel-ignition switch, and rpm slowly stabilized at 43 percent. We confirmed NTS and pulled the No.1 emergency shutdown handle, feathering the propeller. We finished the emergency shutdown checklist and made a three-engine landing at Kinloss.

Postflight inspection found prop fluid covering the No. 1 nacelle, but no evidence of the leak's source. After conferring with our maintenance department at Keflavik, we serviced the propeller with two gallons of fluid and high-powered with no sign of a leak. We believed the front or rear lip seat

shrank from the cold temperatures to the point of allowing prop fluid to leak. After the restart, the fluid and seals heated, allowing the seals to expand.

Even though we carefully addressed the cold temperature's effect on the propeller system, we didn't fully appreciate the recommendation not to loiter below 0 degrees C. Although we adhered to procedures, we could have taken a more conservative approach than the time table provided because we were concerned about conserving fuel. Though the table provides guidance, it only anticipates the propeller-control fluid temperature as a function of loiter time and OAT when several other factors could weigh in the equation, causing the fluid to cool more quickly.

Regardless, we now have a better understanding of the consequences when dealing with this section of our NATOPS. 

Lt. Long flies with VP-16.

# On Cat 1

## Coming Attractions for July

● **New Bi-monthly  
Centerspread Feature:  
ORM Corner**

● **Me and Weeds  
Wring It Out**

● **Over the Edge but  
Going Flying**



Tony Holmes

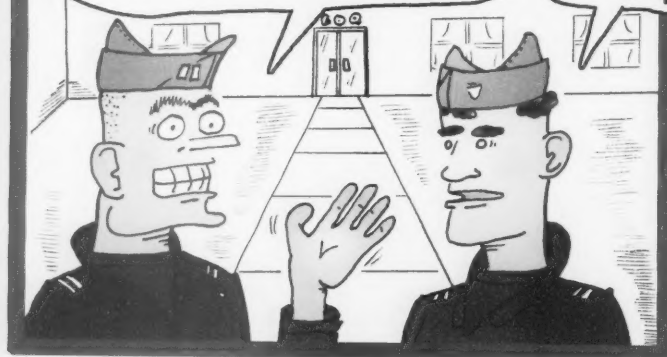




Do you know someone who suffers from "Jargonics"?

I'm high pop, rolling pull, but no sight picture, ergo, negative pickle, pickle. A couple programs off target, and I'm full-blower out of there...

No chance, paddles! Combat FOD walkdown down the angle, asap...



And often it's the families who suffer the most...



Honey, it was totally flap/slat lockout like you read about.

I can't take it any more! Sniff



Well, your treatment is complete. You're ready to communicate with normal people again.

I'm cured? Gouge-as-poss! (Whoops...)



# BROWNSHOES IN ACTION COMIX

"The kind real aviators like"  
by Cdr. Ward Carroll

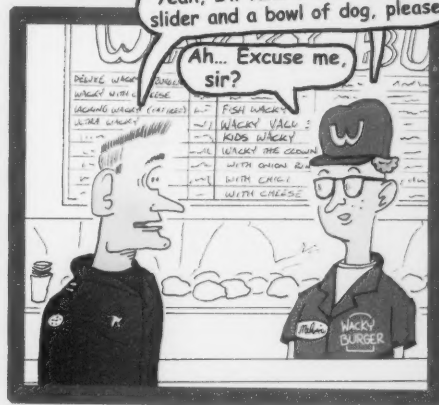


Sure, it seems harmless enough, but life can be tough for those who lose the ability to speak their native tongue...

Welcome to Wacky Burger.  
May I take your order?

Yeah, I'll take a double-cheese slider and a bowl of dog, please.

Ah... Excuse me, sir?



"The Naval Aviation Institute for the Prevention and Treatment of Jargonics (NAIFTPATOJ) is leading the fight against this dreaded disease with a full range of services, including in-patient care for extreme cases..."

OK, lieutenant, let's try it again...

Lead's blind on the cat!  
Call your tally! Call your tally!

Dick looks at the cat.



